AERIS | APPLICATIONS FOR THE ENVIRONMENT: REAL-TIME INFORMATION SYNTHESIS

What Are Transformative Concepts?

TRANSFORMATIVE CONCEPTS are integrated operational concepts that use vehicle-to-vehicle (V2V) and/or vehicle-to-infrastructure (V2I) data and communications in innovative ways to operate surface transportation networks to reduce environmental impacts resulting from transportation-related emissions and fuel consumption.

Transformative Concepts are intended to change the way transportation systems operate, with an emphasis on combining applications to provide significant environmental benefits to surface transportation networks. Transformative Concepts also consider regulatory/policy and educational tools.

Eco-Signal Operations

- Performance Measures
- Connected Eco-Driving
- Transit Signal Priority
- Eco-Traffic Signal System
- Ramp Metering
- Regulatory / Policy Tools
- Educational Tools

Arterial Data Environments

Low-Emissions Zone

- Performance Measures
- Electronic Toll Collection
- Dynamic Emissions Pricing
- Connected Eco-Driving
- Multi-modal Traveler Information
- Regulatory / Policy Tools
- Educational Tools

Eco-Integrated Corridor Management (E-ICM)

- Performance Measures
- ICM Decision Support
- Eco-Signal Operations Apps
- Eco-Lanes Apps
- Incident Management
- Eco-Traveler Information Apps
- AFV Operations Apps
- Regulatory / Policy Tools
- Educational Tools

Future AERIS Research

Eco-Traveler Information

Freeway Data Environments

Corridor (Control) Data Environments

Regional (Info) Data Environments

Eco-Lanes

- Performance Measures
- Dedicated "Eco-Lanes"
- Speed Harmonization
- Queue Warning
- Eco-Adaptive Cruise Control
- Regulatory / Policy Tools
- Educational Tools

Support Alternative Fuel Vehicle Operations

- Performance Measures
- Engine Performance Optimization
- AFV Charging Station Info
- Inductive Charging Infrastructure
- Regulatory / Policy Tools
- Educational Tools

- Performance Measures
- Dynamic Eco-Routing
- Smart Parking
- Multi-modal Traveler Information
- Eco-Driving Information
- Regulatory / Policy Tools
- Educational Tools

LEGEND

- ⬡ AERIS Application
- ⬡ Applications Supported with AERIS Data (R&D by Others)
- ⬡ Performance Measures
- ⬡ Regulatory / Policy Tool
- ⬡ Educational Tool